

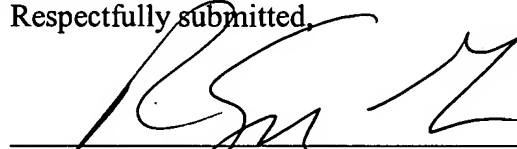
CONCLUSION

It is believed that each of the claims now pending in the present application recites elements neither taught nor suggested by the prior art. Further, it is believed that the application as a whole is in proper form and condition for allowance.

Date: \_\_\_\_\_

4/11/03

Respectfully submitted,

\_\_\_\_\_  
Ross Spencer Garsson

Reg. No. 38,150

Winstead Sechrest &amp; Minick P.C.

Suite 800, 100 Congress Avenue

Austin, Texas 78701

(512) 370-2870 (voice)

(512) 370-2850 (fax)

ATTORNEY FOR APPLICANTS

## Version To Show Changes Made To Claims

1           19. (Renumbered Original Claim 52) A single wall carbon nanotube having one or more  
2 substituents covalently bonded to a sidewall of the single wall carbon nanotube.

1           20. (Amended and Renumbered Original Claim 53) The single wall carbon nanotube of  
2 claim [52] 19, wherein the substituents are selected from the group consisting of alkyl, acyl, aryl,  
3 aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino,  
4 hydroxy, and OR', wherein R' is selected from the group consisting of hydrogen, alkyl, acyl, aryl,  
5 aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, a  
6 linear carbon chain, and a cyclic carbon chain.

1           21. (Amended and Renumbered Original Claim 54) The single wall carbon nanotube of  
2 claim [53] 20, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with  
3 at least one heteroatom.

1           22. (Amended and Renumbered Original Claim 55) The single wall carbon nanotube of  
2 claim [53] 20, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with  
3 one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a  
4 peptide of 2-8 amino acids.

1           23. (Amended and Renumbered Original Claim 56) The single wall carbon nanotube of  
2 claim [52] 19, wherein the substituents are alkyl or phenyl.

1           24. (Amended and Renumbered Original Claim 57) The single wall carbon nanotube of  
2 claim [52] 19, further comprising metal complexed to at least one of the substituents.

1           25. (Amended and Renumbered Original Claim 58) The single wall carbon nanotube of  
2 claim [57] 24, wherein the metal is selected from the group consisting of Group VI B metals and  
3 Group VIII B metals.

1           26. (Amended and Renumbered Original Claim 59) The single wall carbon nanotube of  
2 claim [52] 19, wherein the amount of substituent bonded to carbon atoms of the single wall carbon

nanotube is at a substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent to about two carbon atoms.

27. (Amended and Renumbered Original Claim 60) The single wall carbon nanotube of claim [59] 26, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one substituent to about two carbon atoms.

28. (Amended and Renumbered Original Claim 61) The single wall carbon nanotube of claim [60] 27, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one substituent to about two carbon atoms.

29. (Renumbered Original Claim 62) A product made by the process of covalently bonding substituents to carbon atoms on a sidewall of the single wall carbon nanotube.

30. (Amended and Renumbered Original Claim 63) The product of claim [62] 29, wherein the substituents are selected from the group consisting of alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, hydroxy, and OR', wherein R' is selected from the group consisting of hydrogen, alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, a linear carbon chain, and a cyclic carbon chain.

31. (Amended and Renumbered Original Claim 64) The product of claim [63] 30, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with at least one heteroatom.

32. (Amended and Renumbered Original Claim 65) The product of claim [63] 30, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a peptide of 2-8 amino acids.

33. (Amended and Renumbered Original Claim 66) The product of claim [62] 29, wherein the substituents are selected from the group consisting of fluorine, alkyl and phenyl.

1           34. (Amended and Renumbered Original Claim 67) The product of claim [62] 29, further  
2 comprising the step of complexing a metal to at least one of the substituents.

1           35. (Amended and Renumbered Original Claim 68) The product of claim [67] 34, wherein  
2 the metal is selected from the group consisting of Group V I B metals and Group VIII B metals.

1           36. (Amended and Renumbered Original Claim 69) The product of claim [62] 29, wherein  
2 the amount of substituent bonded to carbon atoms of the single wall carbon nanotube is at a  
3 substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent  
4 to about two carbon atoms.

1           37. (Amended and Renumbered Original Claim 70) The product of claim [69] 36, wherein  
2 the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the  
3 substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one  
4 substituent to about two carbon atoms.

1           38. (Amended and Renumbered Original Claim 71) The product of claim [70] 37, wherein  
2 the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the  
3 substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one  
4 substituent to about two carbon atoms.

1           39. (Renumbered Original Claim 72) A product made by the process comprising:  
2           (a) fluorinating a single wall carbon nanotube;  
3           (b) reacting the fluorinated single wall carbon nanotube with a compound containing  
4 a substituent to covalently bond the substituents to the single wall carbon nanotube.

1           40. (Amended and Renumbered Original Claim 73) The product of claim [72] 39, wherein  
2 the substituents are selected from the group consisting of alkyl, acyl, aryl, aralkyl, halogen,  
3 substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, hydroxy, and OR', a  
4 linear carbon chain, a cyclic carbon chain, and peptide, wherein R' is selected from the group  
5 consisting of hydrogen, alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol,  
6 substituted amino, unsubstituted amino, a linear carbon chain, and a cyclic carbon chain.

1           41. (Amended and Renumbered Original Claim 74) The product of claim [73] 40, wherein  
2 the linear carbon chain or the cyclic carbon chain or both is substituted with at least one heteroatom.

1           42. (Amended and Renumbered Original Claim 75) The product of claim [73] 40, wherein  
2 the linear carbon chain or the cyclic carbon chain or both is substituted with one or more of the group  
3 consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a peptide of 2-8 amino acids.

1           43. (Amended and Renumbered Original Claim 76) The product of claim [72] 39, wherein  
2 the substituents are alkyl or phenyl.

1           44. (Amended and Renumbered Original Claim 77) The product of claim [72] 39 made by  
2 the process further comprising the step of complexing a metal to at least one of the substituents.

1           45. (Amended and Renumbered Original Claim 78) The product of claim [77] 44, wherein  
2 the metal is selected from the group consisting of Group VI B metals and Group VIII B metals.

1           46. (Amended and Renumbered Original Claim 79) The product of claim [72] 39, wherein  
2 the amount of substituent bonded to carbon atoms of the single wall carbon nanotube is at a  
3 substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent  
4 to about two carbon atoms.

1           47. (Amended and Renumbered Original Claim 80) The product of claim [79] 46, wherein  
2 the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the  
3 substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one  
4 substituent to about two carbon atoms.

1           48. (Amended and Renumbered Original Claim 81) The product of claim [80] 47, wherein  
2 the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the  
3 substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one  
4 substituent to about two carbon atoms.

1           49. (Amended and Renumbered Original Claim 82) The product of claim [72] 39, wherein  
2 said step of fluorinating the single wall carbon nanotube comprises exposing the single wall carbon  
3 nanotube to a fluorinating agent.

1           50. (Amended and Renumbered Original Claim 83) The product of claim [82] 49, wherein  
2 the fluorinating agent is selected from the group consisting of fluorine,  $\text{ClF}_3$ ,  $\text{BrF}_3$ ,  $\text{IF}_5$ ,  $\text{XeF}_2$ ,  $\text{XeF}_4$ ,  
3  $\text{AgF}_2$ , and  $\text{MnF}_3$ .

1           51. (Amended and Renumbered Original Claim 84) The product of claim [82] 49, wherein  
2 the fluorinating step occurs at a reaction temperature up to about  $500^\circ\text{C}$ .

1           52. (Amended and Renumbered Original Claim 85) The product of claim [82] 49, wherein  
2 the reaction temperature is between about  $250^\circ\text{C}$  and about  $400^\circ\text{C}$ .

1           53. (Renumbered Original Claim 86) A derivatized single wall carbon nanotube made by  
2 the process comprising the steps of:

- 3           (a) reacting the single wall carbon nanotube with a fluorinating agent;  
4           (b) solvating the single wall carbon nanotube from step (i); and  
5           (c) reacting the fluorinated single wall carbon nanotube with a compound containing  
6 a substituent to covalently bond the substituent to the single wall carbon nanotube.

1           54. (Amended and Renumbered Original Claim 87) The derivatized single wall carbon  
2 nanotube of claim [86] 53, wherein the substituents are selected from the group consisting of alkyl,  
3 acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted  
4 amino, hydroxy, and  $\text{OR}'$ , wherein  $\text{R}'$  is selected from the group consisting of hydrogen, alkyl, acyl,  
5 aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino,  
6 a linear carbon chain, and a cyclic carbon chain.

1           55. (Amended and Renumbered Original Claim 88) The derivatized single wall carbon  
2 nanotube of claim [87] 54, wherein the linear carbon chain or the cyclic carbon chain or both is  
3 substituted with at least one heteroatom.

1           56. (Amended and Renumbered Original Claim 89) The derivatized single wall carbon  
2 nanotube of claim [87] 54, wherein the linear carbon chain or the cyclic carbon chain or both is  
3 substituted with one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino  
4 acid, and a peptide of 2-8 amino acids.

1           57. (Amended and Renumbered Original Claim 90) The derivatized single wall carbon  
2 nanotube of claim [86] 53, wherein the fluorinating agent is selected from the group consisting of  
3 fluorine, ClF<sub>3</sub>, BrF<sub>3</sub>, IF<sub>5</sub>, XeF<sub>2</sub>, XeF<sub>4</sub>, AgF<sub>2</sub>, and MnF<sub>3</sub>.

1           58. (Amended and Renumbered Original Claim 91) The derivatized single wall carbon  
2 nanotube of claim [86] 53, wherein the solvation step comprises sonication.

1           59. (Amended and Renumbered Original Claim 92) The derivatized single wall carbon  
2 nanotube of claim [86] 53, wherein the solvation step comprises using a solvent selected from the  
3 group consisting of an alcohol, CHCl<sub>3</sub>, and dimethylformamide.

1           60. (Amended and Renumbered Original Claim 93) The derivatized single wall carbon  
2 nanotubes of claim [92] 59, wherein the alcohol is selected from the group consisting of methanol,  
3 ethanol, 2,2,2-trifluoroethanol, 2-propanol, 2-butanol, n-pentanol, n-hexanol, cyclohexanol and n--  
4 heptanol.

1           61. (Amended and Renumbered Original Claim 94) The derivatized single wall carbon  
2 nanotube of claim [86] 53, wherein the amount of substituent bonded to carbon atoms of the single  
3 wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about 26 carbon  
4 atoms to (b) one substituent to about two carbon atoms.

1           62. (Amended and Renumbered Original Claim 95) The derivatized single wall carbon  
2 nanotube of claim [94] 61, wherein the amount of substituent bonded to the carbon atoms of the  
3 single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about  
4 ten carbon atoms to (b) one substituent to about two carbon atoms.

1           63. (Amended and Renumbered Original Claim 96) The derivatized single wall carbon  
2 nanotube of claim [95] 62, wherein the amount of substituent bonded to the carbon atoms of the  
3 single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about  
4 three carbon atoms to (b) one substituent to about two carbon atoms.

AUSTIN\_1\211245\1  
11321-P013D2 04/11/2003